

A GLOBAL PLASTIC BAG MANUFACTURER AND ZENITH PUMPS **ROLL OUT A REVOLUTIONARY NEW WAY** OF MAKING SCENTED PLASTIC BAGS



- ✓ *A pulse free process that guarantees equal and uniform fragrance distribution*
- ✓ *Accurate and repeatable*
- ✓ *A compact design ideal for metering additives*
- ✓ *Eliminates the need to have separate pellet silos for each scent*
- ✓ *Eliminates the fumes that come from pellets*

Our customer is a global manufacturer of scented plastic garbage bags. Zenith's precision gear metering pump solution provided a continuous pulse-free process that gave them accuracy and consistency at the low flow rates required.

THE CHALLENGE

The customer was manufacturing scented plastic garbage bags using pre-scented plastic pellets, which required a dedicated silo for each of the 20 available fragrances. The pellets are pneumatically conveyed to each silo from either tanker trucks or rail cars. The customer was experiencing logistical issues associated with keeping the silos filled, and each silo required a separate enclosed venting vacuum system to expel fumes from the pellets as they travel from the silos to the plastic extruders. In addition to this, were the high costs related to purchasing pre-scented pellets. The heavily concentrated scents from the pellets caused health concerns for the workers who complained of headaches. Therefore, each extruder line was fitted with a vacuum exhaust hood to expel these fumes. This sometimes led to complaints from neighbors and citations from the United States Environmental Protection Agency.

The company was seeking a way to use plain plastic pellets and apply scented oil directly to the plastic sheet right after the extrusion process. They had tried to build such a system internally but had struggled to achieve accuracy and consistency at the low flow rates they required. Because they were not able to meet rigorous quality control standards requiring the spray-on scent to exactly match that of pre-scented pellets, they began to seek a pump-based solution that could directly spray fragrance on the warm melted sheet plastic.

THE SOLUTION

Design engineers from the plastic bag manufacturer initially approached Zenith at the PackExpo show upon observing a working demonstration of Zenith's precision gear metering pumps. After collecting information on the application, a Zenith area manager with invaluable experience in dosing and blending systems visited the plant to get a firsthand view of current operations and gather additional information. Working with the Zenith systems design group they developed a solution using a Zenith B9000 Series pump which features an accurate, repeatable, pulse free flow in a compact design ideal for metering additives.

The B-9000 pumps are available with magnetic drive (mag-drive) sealing option, which can eliminate shaft leakage of fluids, increasing plant safety and reducing

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volatile organic compound emissions. The use of a magnetic coupling also eliminates downtime due to mechanical seal failures and eliminates the need for buffer fluids.

The pump system provides a continuous pulse free process, which guarantees equal and uniform fragrance distribution. By adding the scent directly to the bags after leaving the extruder, the customer not only eliminates the need to have separate pellet silos for each scent, but also eliminates the need to vent the fumes that come from the pellets as they travel from the silos to the extruders.

The customer purchased the first trial system shortly afterward; after successful startup and trials, they ordered six additional systems. Over the past two years they have purchased more than 30 additional systems, with plans to order more. Zenith is currently working on a plan for its aftermarket group to conduct annual field calibrations of each system.



Zenith B-9000 Pump

THE RESULTS

After two years of operation, the customer estimates a yearly savings of approximately \$480,000 per skid in operation. With 30 skids now running, return on investment for the pump purchase can be measured in days.

Elimination of the enclosed vacuum systems for each line conveying pellets contributed to the savings by reducing energy use considerably. In addition, there have been no odor complaints since the customer installed the new system.



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